



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,422	08/08/2001	Osamu Tsujii	35.C15675	9933

5514 7590 09/22/2005

FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER
----------

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
----------	--------------

2615

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/923,422

Applicant(s)

TSUJII ET AL.

Examiner

Yogesh K. Aggarwal

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 19-24, 26-28, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 19-24, 26-28, 32 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Arguments***

1. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 19-24, 26-28, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over (JP 11-151233 to Nonaka) in view of Shibazaki (US PG-PUB # 2005/0062865).

[Claim 1]

Nonaka discloses an image sensing apparatus comprising a radiation generating apparatus adapted to generate radiation after receiving an exposure preparation signal (e.g., element 10 of Fig. 1; paragraph 0053 the exposure preparation signal is the image sensing request signal 51);

a sensor comprising a plurality of pixels for converting radiation to electrical signals (e.g., element 22 of Fig. 1);

a signal line adapted to read out said electrical signals from said image pickup elements (e.g., signal lines SIG of Fig. 2; paragraph 0037);

a preamplifier adapted to amplify said electrical signals read out from said image pickup elements (e.g., the amplifier drawn with the read-out IC in Fig. 2)

a first power source (e.g., Examiner notes that it is implicit to have a first power source to supply power to said sensor unit in order for it to work).

Nonaka discloses that after receiving an image sensing request signal refreshing and dummy read operations are performed a predetermined number of times, and then exposed to radiation so as to accumulate an image as described in paragraph 0053. Upon completion of the exposure the image signal is output for storage and display as described in paragraphs 0054 and 0055.

Nonaka does not explicitly disclose nor preclude a first power source adapted to set said signal line to a reference potential so as to set said image pickup elements to an initialized state, a second power source adapted to supply electric power to said preamplifier, a control circuit adapted to cause said first power source to set said signal line to the reference potential before said radiation generating apparatus irradiates radiation, and to cause said second power source to supply electrical power to said preamplifier after said radiation generating apparatus irradiates radiation, wherein said control circuit is further adapted to determine whether a further image sensing is to be carried out, and based on said determination both of said first power source and said second power source are stopped or only said second power source is stopped, wherein said control circuit makes said determination after reading out said electric signals from said image pickup elements.

However Shibazaki teaches that when the shutter release button 47 is pressed all the way down and the release switch is turned on at a time  $t_3$ , power from the positive source 7 (read as

Art Unit: 2615

second power source) and the negative source 6 is supplied to the output amplifier 4 in the image-capturing device and also power (not shown in drawings, and read as first power source) is supplied to the photoelectric conversion elements 1 and the charge transfer elements 2 and 3 (Paragraph 50). Also note in figure 3 that the power is supplied to photoelectric conversion elements 1 before the exposure starts (time t6) and the power to the amplifier starts (bias current t10) after the exposure ends. Shibazaki further teaches that when the release switch is fully pressed (figure 3c) and therefore reads on wherein said control circuit is further adapted to determine whether a further image sensing is to be carried out and after the reading (figure 3g) ends at time t14, the image capturing power source is turned off (figure 3d) at t14 and the amplifier power source is also disconnected (figure 3h) [Depending upon the resistance 10, the bias current is almost negligible so that effectively second power is also stopped].

Therefore taking the combined teachings of Nonaka and Shibazaki, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have a first power source adapted to set said signal line to a reference potential so as to set said image pickup elements to an initialized state, a second power source adapted to supply electric power to said preamplifier, a control circuit adapted to cause said first power source to set said signal line to the reference potential before said radiation generating apparatus irradiates radiation, and to cause said second power source to supply electrical power to said preamplifier after said radiation generating apparatus irradiates radiation, wherein said control circuit is further adapted to determine whether a further image sensing is to be carried out, and based on said determination both of said first power source and said second power source are stopped or only said second power source is stopped, wherein said control circuit makes said determination after

Art Unit: 2615

reading out said electric signals from said image pickup elements in order to minimize the local heat generation occurring at the output amplifier so that an increase in the dark current caused by the photoelectric conversion elements 1 that have become heated in the vicinity of the output amplifier 4 is prevented, to ultimately avoid occurrence of dark current shading in the captured image. In addition, since the bias current at the output amplifier 4 is reduced when it is not necessary to operate the output amplifier 4, battery consumption at the electronic camera is minimized as taught in Shibazaki (Paragraph 57).

[Claim 19]

In regards to claim 19 see paragraph 0054 of Nonaka's disclosure. Note that the irradiation end detection signal 57 is the "exposure completion signal".

[Claim 20]

Nonaka teaches in lines 22-27 of paragraph 0053 and paragraph 0054. Note that phototimer 15 is a radiation exposure dose monitor.

[Claim 21]

In regards to claim 21 Nonaka discloses an image sensing apparatus according to claim 1, further comprising an exposure permission timer adapted to generate a radiation exposure permission signal for said radiation generating apparatus to generate radiation after a predetermined time elapses from supply of the electrical power from said first power source to said sensor (e.g., Examiner notes paragraph 0053, lines 9-19. Note that there is a predetermined elapse of time from the start of the refresh operation, or the start of supplying power to said sensor unit, to the start of generating radiation wherein the exposure permission timer is part of the control unit 25.

Art Unit: 2615

Note that the image sensing preparation completion signal 55 is the claimed radiation exposure permission signal), and

wherein said control circuit controls said second power source so as to start a supply of electrical power to said preamplifier on the basis of a timing of generating a radiation exposure permission signal (e.g., Examiner notes that on the basis of receiving a radiation exposure permission signal the generation of radiation is started, wherein an exposure period is set (paragraph 0053, lines 22-27; Figs. 4 and 6), wherein on the basis of completion of the exposure time period the read-out operations are preformed and thus the power is supplied to the amplifier).

[Claim 22]

Nonaka discloses that the exposure permission signal is generated on the basis of performing the refresh and dummy read operations, thereby creating a stable state of said sensor unit (paragraphs 0046-0050).

[Claim 23]

Nonaka discloses that the exposure permission signal is generated on the basis of performing the refresh and dummy read operations, thereby creating a stable state of an offset of said sensor unit, namely the offsets created by stray charges and currents (paragraphs 0046-0050).

[Claim 24]

Nonaka discloses that the offset amount of said sensor unit is checked by said exposure permission timer, namely control unit 25, through checking the completion of the refreshing and dummy read operations, wherein upon completion of the refreshing and dummy read operations the exposure permission signal is generated.

Art Unit: 2615

[Claim 26]

Shibazaki teaches stopping a supply of electrical power to the preamplifier on the basis of a timing of the completion of the read-out operation (figure 3b at time t14) [Depending upon the resistance 10, the bias current is almost negligible so that effectively second power is also stopped].

[Claim 27]

Nonaka depicts in Figs. 4 and 6 the refresh and dummy read operations are preformed on the basis of the depression of the irradiation button, or the exposure preparation signal, wherein the power is supplied to the sensor unit upon starting the refresh operation as discussed above.

[Claim 28]

Nonaka depicts in Figs. 4 and 6 the offset correction is the refresh and dummy read operation wherein it is started on the basis of the irradiation button, or exposure preparation signal, and upon completion of the refresh and dummy read operations the radiation is generated.

[Claim 32]

In regards to claim 32 the start command transmitting device is the irradiation button 14 described in paragraph 0053 of Nonaka wherein the operation of the operator is pushing the button.

[Claim 33]

In regards to claim 33 see Examiner's notes on the rejections above. Note that the entire system depicted in Fig. 1 is a system storing an information relating to radiation. As such, the transmitting of the exposure preparation signal to the radiation generating apparatus and control circuit is transmitted through a system storing an information relating to radiation.



***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.


5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA

September 18, 2005

  
DAVID L. OMETZ  
SUPERVISORY PATENT  
EXAMINER